

PATENT

42390P13154

**CLAIM AMENDMENTS:**

1. (Currently amended) A method of monitoring host signal quality, comprising:  
embedding a distortion-dependant watermark in a data set, the distortion-dependant watermark  
derived by quantizing the host signal using an ensemble of increasingly coarse quantizers;  
processing the data set using a parameter set;  
determining degradation of the host signal quality by recovering a signal in the data set; and  
adjusting the parameter set for processing the data set based on the recovered signal.
2. (Original) The method of claim 1, further comprising processing the data set by transform  
encoding the data set.
3. (Original) The method of claim 1, further comprising processing the data set by packetizing  
and transmitting the data set.
4. (Original) The method of claim 1, further comprising identifying image frame errors in packet  
transmitted audiovisual data sets.
5. (Original) The method of claim 1, wherein adjusting the parameter set further comprises  
modifying network bandwidth to compensate for data corruption of the data set.
6. (Previously presented) The method of claim 1, wherein determining degradation of the host  
signal quality further comprises quantitatively measuring spatial extent of corruption of image  
data sets.
7. (Previously presented) The method of claim 1, wherein determining degradation of the host  
signal quality further comprises quantitatively measuring temporal duration of corruption of data  
sets.
8. (Currently amended) An article comprising a computer readable medium to store computer  
executable instructions, the instructions defined to cause a computer to monitor host signal  
quality by:

## PATENT

42390P13154

embedding a distortion-dependant watermark in a data set, the distortion-dependant watermark derived by quantizing the host signal using an ensemble of increasingly coarse quantizers; processing the data using a parameter set, determining degradation of the host signal quality by recovering a signal in the data set; and adjusting the parameter set for processing the data based on the recovered signal.

9. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to monitor the host signal quality by transform encoding the data set.

10. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to monitor the host signal quality by packetizing and transmitting the data set.

11. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to monitor the host signal quality by identifying image frame errors in packet transmitted audiovisual data sets.

12. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to monitor the host signal quality by modifying network bandwidth to compensate for data corruption of the data set.

13. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to monitor the host signal quality by quantitatively measuring spatial extent of corruption of image data sets.

14. (Previously presented) The article comprising a computer readable medium to store computer executable instructions of claim 8, wherein the instructions further cause a computer to

BEST AVAILABLE COPY

PATENT

42390P13154

monitor the host signal quality by quantitatively measuring temporal duration of corruption of data sets.

15. (Currently amended) A system for monitoring host signal quality, comprising a watermarking module to embed a distortion-dependant recoverable watermark in a data set, the distortion-dependant watermark derived by quantizing the host signal using an ensemble of increasingly coarse quantizers; a processing module for modifying the data using a parameter set; and a watermark recovery module to determine degradation of the host signal quality by recovering a signal in the data set.

16. (Previously presented) The system of claim 15, wherein the processing module further comprises a transform encoding processor to process the data set by transform encoding the data set.

17. (Previously presented) The system of claim 15, wherein the processing module further comprises a packetizer to process the data set by packetizing and transmit the data set.

18. (Previously presented) The system of claim 15, wherein the watermark recovery module further detects image frame errors in packet transmitted audiovisual data sets.

19. (Previously presented) The system of claim 15, wherein the processing module adjusts the parameter set by modifying network bandwidth to compensate for data corruption of the data set.

20. (Previously presented) The system of claim 15, wherein the watermark recovery module quantitatively measures spatial extent of corruption of image data sets.

21. (Previously presented) The system of claim 15, wherein the watermark recovery module quantitatively measures temporal duration of corruption of data sets.

BEST AVAILABLE COPY

PATENT

42390P13154

22. (Previously presented) The system of claim 15, further comprising a back channel transmitter to communicate information to the processing module to adjust the parameter set for the data processing based on the presence of data corruption detected by the watermark recovery module.

23 - 27. (Canceled)

28. (Currently amended) A method of monitoring host signal quality, comprising:  
embedding a distortion dependant watermark in a data set to allow reception-side determination of quality of the data set by measuring the amount of a recovered watermark, the distortion-dependant watermark derived by quantizing the host signal using an ensemble of increasingly coarse quantizers;  
transmitting the data set having the embedded distortion-dependant watermark; and  
accepting information about the recovered watermark and utilizing the recovered watermark to adjust at least one of a data encoding parameter and a transmission parameter for at least one later transmitted data set.

29. (Canceled)

BEST AVAILABLE COPY